

# **SNOW SLED**

## **BACKGROUND OF THE INVENTION**

### **1. Field of the Invention**

[0001] The subject invention relates to a sled having a unique  
5 combination of runner relationships for gliding or sledding over snow, or the like.

### **2. Description of the Related Art**

[0002] The art is replete with sleds having various combinations or  
arrangements of runners on the bottom surface of a sled body. Examples of such prior  
art sleds are shown in U.S. Design Patents Des. 201,815 to Greenberg and Des.  
10 231,516 to Johnson. In addition, U.S. Patents 2,139,513 to Nelson et al, 4,561,664 to  
Cashmere and 5,868,405 to Lavecchia et al disclose various combinations of runners  
for guiding the sled or toboggan through the snow. It is customary to include arcuate  
or curved runners for turning and straight runners for stability. However, in such prior  
art runner placements, the arcuate runners are longitudinally co-extensive with the  
15 straight runners and/or at least one of the arcuate or straight runners extend  
substantially the entire length of the bottom of the sled or toboggan.

## **BRIEF SUMMARY OF THE INVENTION AND ADVANTAGES**

[0003] The subject invention provides a unique combination of runner  
20 placements on a body having front and rear ends, sides and top and bottom surfaces  
and an axis extending longitudinally from the front end to the rear end to divide the  
body into two longitudinal symmetrical halves. A pair of front runners extends  
arcuately in the longitudinal direction along the bottom surface from the front end  
toward the longitudinal middle of the body and is disposed on opposite sides of the  
25 axis. At least one rear runner extends longitudinally straight along the bottom surface

from the rear end toward the middle of the body. The arrangement is distinguished by a major portion of the extent of the front runners being devoid of longitudinal overlap with the rear runner and a major portion of the extent of the rear runner being devoid of longitudinal overlap with the front runners whereby the front runners lead into the rear runners adjacent the middle of the body.

[0004] Accordingly, the sled of the subject invention substantially separates the arcuate front runners longitudinally from the straight rear runners to provide very responsive control during sledding, the control often producing exciting movements, such as shifting movements.

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#### **BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS**

[0005] Other advantages of the present invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

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[0006] Figure 1 is a bottom view of a first embodiment of the invention;

[0007] Figure 2 is rear view taken along line 2-2 of Figure 1;

[0008] Figure 3 is front view taken along line 3-3 of Figure 1;

20 [0009] Figure 4 is a bottom view of a second embodiment of the invention; and

[0010] Figure 5 is a side view taken along line 5-5 of Figure 4.

## DETAILED DESCRIPTION OF THE INVENTION

[0011] Referring to the Figures, wherein two embodiments of the sled are shown, a first generally at 10 in Figures 1-3 and the second generally at 110 in Figures 4 and 5, with like numerals separated by one hundred indicating like or  
5 corresponding parts throughout the embodiments.

[0012] The sled 10, 110 comprises an integral body molded in one piece of a single sheet of plastic material and having various features which are described below and shown in the drawings, all of which are formed in the sheet material by a process such as thermo-forming, and are all non-moving relative to the  
10 body (i.e., none of the features articulate or move relative to the sheet). The sled 10, 110 has a front end 12, 112 and a rear end 14, 114 interconnected by sides at front corners 16, 116 and rear corners 18, 118. The sled 10, 110 includes top 20, 120 and bottom 22, 122 surfaces and an axis (A) extending longitudinally from the front end 12, 112 to the rear end 14, 114 dividing the body into two longitudinal symmetrical  
15 halves. The center of the body extends downwardly or is concave and is surrounded by a peripheral laterally extending flange 24, 124 that is waisted in the middle between the two front corners 16, 116 and the two rear corners 18, 118. The waisted middle includes or is defined by a pair of notches 26, 126 in the flange 24, 124 on either side of the middle. The flange 24, 124 bulges outwardly between the notches  
20 26, 126 and the front 16, 116 and rear corners 18, 118 to define an hourglass-like shape, although the bulge adjacent the front corners 16 of the first embodiment is wider than the bulge adjacent the rear corners 18. The flange 24, 124 also includes a lead point 28, 128 on the center axis (A) at the front end 12, 112 between the front corners 16, 116. In the first embodiment, the flange 24 is straight across between the

rear corners 18 whereas in the second embodiment the flange 124 includes a trailing point 130 on the center axis (A) at the rear end 114 between the rear corners 118.

[0013] A pair of front runners 32, 132 extend arcuately in the longitudinal direction along the bottom surface 22, 122 from the front end 12, 112 toward the longitudinal middle of the body and are disposed on opposite sides of the axis (A), i.e., the pair of runner 32, 132 straddle the longitudinal axis (A). The front runners 32, 132 curve toward one another from the front end 12, 112 toward the middle.

[0014] A plurality of rear runners comprising first 34, 134 and second 36, 136 pairs extend longitudinally straight along the bottom surface 22, 122 from the rear end 14, 114 toward the middle of the body. The front runners 32, 132 curve toward one another from the front end 12, 112 and into parallel rear sections directed into the rear runners 34, 134, 36 and 136. More specifically, a major portion of the extent of the front runners 32, 132 are devoid of longitudinal overlap with the rear runners 34, 134, 36 and 136 and a major portion of the extent of the rear runners 34, 134, 36 and 136 are devoid of longitudinal overlap with the front runners 32, 132 whereby the front runners 32, 132 lead into the rear runners 34, 134, 36 and 136 adjacent the middle of the body. In fact, the front runners 32 in the first embodiment do not overlap the rear runners 34 or 36 in the first embodiment whereas less than twenty percent (20%) of the length of the front 132 and rear 134 or 136 runners of the second embodiment overlap.

[0015] The plurality of rear runners 34, 36, 134 and 136 are disposed closer to the longitudinal axis (A) than the front runners 32, 132. In other words, the runners of each of the first and second pairs of rear runners 34, 36, 134 and 136 are disposed on opposite sides of the longitudinal axis (A) and both pairs are disposed

closer to the longitudinal axis (A) than the parallel rear sections of the front runners 32, 132 with the second pair 36, 136 of rear runners disposed inside the first pair 34, 134 of rear runners, which are, in turn, disposed inside the parallel sections of said front runners 32, 132,. The first and second pairs of rear runners 34, 36, 134 and 136 each have a front end and the front ends 38, 138 of the first pair of rear runners 34, 134 being closer to the front end 12, 112 of the body than the front ends 40, 140 of the second pair of rear runners 36, 136. In order to improve directional control, each of the rear runners 34, 36, 134 and 136 tapers from a point at the front end 38, 40, 138 and 140 thereof adjacent the middle to a wide section adjacent the rear end 14, 114 of the body.

[0016] The sled includes at least one straight guide runner 42, 142 disposed on the longitudinal axis (A) and on the bottom surface 22, 122 between the front runners 32, 132. The guide runner 42, 142 is substantially co-extensive longitudinally with the front runners 32, 132 and tapers in a narrowing fashion from the front end 12, 112 toward the middle of the body.

[0017] As illustrated in the second embodiment of Figures 4 and 5, the sled may include a brake ridge 144 disposed in an arcuate path across the longitudinal axis (A) adjacent the rear end 114 of the body. So that the brake ridge is not in the braking mode during normal sledding, the rear runners 34, 36, 134 and 136 extend outwardly from the bottom surface 122 of the body further than the brake ridge 144. To facilitate this, the body includes an inclined section 146 adjacent the rear end 114 and slanting upwardly into the body from the wide end of the rear runners 34, 36, 134 and 136 to the rear end 14, 114 of the body with the brake ridge 144 disposed on and extending upwardly from the inclined section 146. The brake ridge 144 comprises a plurality of teeth 148 separated by a plurality of interleaved arches 150.

**[0018]** Obviously, many modifications and variations of the present invention are possible in light of the above teachings. The invention may be practiced otherwise than as specifically described within the scope of the appended claims.